Application No.: 10/646,994
Amendment

AMENDMENTS TO THE SPECIFICATION

Just before the paragraph beginning at line 1, page 42, please ADD the following three NEW paragraphs:

FIG. 10 illustrates an example of a terrestrial optical communications network 200. The terrestrial optical network 200 includes a plurality of link head stations 220 between and through which optical signals are communicated. The optical signals are conducted over free-space optical links 222 and fiber optic conductor links 224 which extend between the link head stations 220. The free-space links 222 and the fiber links 224 are integrated together in the network 200 in a seamless manner, to avoid electro-optical conversion of the optical signals transferred between the free-space links 222 and the fiber links 224, and to communicate optical signals of the same frequency and wavelength over both the free-space and fiber links.

A repeater 226 is included in the free-space link 222a which extends between stations 220a and 220b. In addition to amplifying the optical signal in the free-space link 222a, the repeater station 226 allows the free-space link 222a to be diverted around a natural or manmade obstacle, which is exemplified by a mountain 228 as shown in FIG. 10. The free-space link 222a is therefore not a line-of-sight optical path between the link head stations 220a and 220b.

An example of a transceiver 230 employed in a free-space repeater, (e.g. 226, FIG. 10), is shown in FIG. 11. The free-space repeater transceiver 230 also includes two erbium doped fiber amplifiers (EDFAs) 232 and 234 which function to amplify the optical signals which are received and transmitted. For example, the EDFA 232 receives optical signals conducted over

a fiber optic cable 236 from the received beam focusing element 238 shown on the right-hand side of FIG. 11, amplifies those optical signals without electro-optical conversion and supplies the amplified optical signals on a fiber optic cable 240 to the transmitting beam focusing element 242 shown on the left hand side of FIG. 11. Similarly, the receiving beam focusing element 238 shown on the left hand side of FIG. 11 receives optical signals, and those signals are conducted over the fiber optic conductor 246 to the EDFA 234. The EDFA 234 amplifies those signals and supplies the amplified signals over the fiber optic conductor 248 to the transmitting beam focusing element 242 shown on the right hand side of FIG. 11. Position adjusting mechanisms 252 may also be connected to each of the beam focusing elements 238 and 242 of the repeater amplifier transceiver 230. The EDFAs 232 and 234 of the transceiver 230 amplify the optical signals in the free-space links 222a which are passed in both directions through the repeater, without electro-optical conversion.